

CLAIMS:

1. A medical device having a surface coated with a composition comprising a lectin, wherein the lectin binds a compound produced by a microorganism capable of forming a biofilm on the surface of the medical device.
- 5 2. The medical device of claim 1, wherein the lectin is disposed within a biodegradable polymer.
3. The medical device of claim 2, wherein the biodegradable polymer is a biocompatible polymer that degrades at a controllable rate within an in vivo environment.
4. The medical device of claim 1, wherein the composition further comprises at least one
10 agent that inhibits the growth of the microorganism.
5. The medical device of claim 4, wherein the agent is an antibiotic or an antifungal agent.
6. The medical device of claim 1, wherein the lectin binds to a compound produced by a microorganism selected from the group consisting of *Pseudomonas aeruginosa*, *Streptococcus pneumoniae*, *Streptococcus viridans*, *Haemophilus influenzae*, *Escherichia coli*, *Staphylococcus aureus*,
15 *Staphylococcus epidermidis* and *Candida albicans*.
7. The medical device of claim 1, wherein the lectin is wheat germ agglutinin or concanavalin A.
8. The medical device of claim 1, wherein the device is implantable.
9. The medical device of claim 8, wherein the device comprises a drug delivery pump, a
20 pacemaker, a cochlear implant, a shunt, a catheter or a cannula.
10. A biocompatible composition for coating the surface of a medical device, the composition comprising a lectin, wherein the lectin binds a compound produced by a microorganism capable of forming a biofilm on the surface of the medical device and wherein the composition further comprises a biodegradable polymer or an agent that inhibits the growth of the organism.
- 25 11. The composition of claim 10, wherein the composition comprises a biodegradable polymer and an agent that inhibits the growth of the organism.
12. The composition of claim 10, wherein the composition is composed of layers of materials.
13. The composition of claim 10, wherein the composition comprises a plurality of lectins.
- 30 14. The composition of claim 13, wherein the plurality of lectins binds a plurality of compounds produced by a plurality of microorganisms capable of forming a biofilm.

15. The composition of claim 11, wherein the composition comprises a plurality of polymers.

16. The composition of claim 11, wherein the composition comprises a plurality of biocidal agents.

17. The composition of claim 10, wherein the biodegradable polymer degrades at a defined rate within an in vivo environment.

18. The composition of claim 10, wherein the lectin binds to a compound produced by a microorganism selected from the group consisting of *Pseudomonas aeruginosa*, *Streptococcus pneumoniae*, *Streptococcus viridans*, *Haemophilus influenzae*, *Escherichia coli*, *Staphylococcus aureus*, *Staphylococcus epidermidis* and *Candida albicans*.

19. The medical device of claim 10, wherein the lectin is wheat germ agglutinin or concanavalin A.

20. A method for inhibiting the formation of a biofilm on the surface of a medical device; the method comprising coating the device with a composition comprising:

(a) a biodegradable polymer; and

(b) a lectin disposed within the biodegradable polymer, wherein the lectin is selected for the ability to bind a biofilm compound produced by a microorganism capable of forming a biofilm on the surface of the medical device;

so that when a microorganism capable of forming a biofilm contacts the medical device, the lectin binds to the biofilm compound produced by the microorganism, thereby coupling the biofilm compound to the biodegradable polymer in a manner such that when the biodegradable polymer degrades, the biofilm sloughs away from the medical device, thereby inhibiting the formation of a biofilm on the surface of the medical device.

21. The method of claim 20, wherein the composition further comprises an agent that inhibits the growth of the organism.

22. The method of claim 21, wherein the composition further comprises a substantially non-biodegradable polymer and wherein the biocidal agent is disposed with the substantially non-biodegradable polymer such that when the biodegradable polymer degrades, the biocidal agent remains on the surface of the medical device.

23. The method of claim 20, wherein the composition is composed of layers of materials.

24. The method of claim 20, wherein the composition comprises a plurality of lectins.

25. The method of claim 24, wherein the plurality of lectins binds a plurality of compounds produced by a microorganism capable of forming a biofilm.

26. The method of claim 21, wherein the composition comprises a plurality of biocidal agents.

27. The method of claim 20, wherein the biodegradable polymer is selected to degrade at a defined rate within an in vivo environment.

28. The method of claim 20, wherein the device is implantable.

29. The method of claim 28, wherein the device comprises a drug delivery pump, a pacemaker, a cochlear implant, a catheter or a cannula.

30. A method of making a medical device having a coating that inhibits the microbial colonization of a surface of the device comprising coating the surface with a composition comprising:

(a) a biodegradable polymer; and

(b) a lectin coupled to the biodegradable polymer, wherein the lectin is selected to bind a compound produced by a microorganism capable of forming a biofilm on the surface of the medical device.

31. The method of claim 30, wherein the composition further comprises an agent that inhibits the growth of the organism.

32. The method of claim 30, wherein the device is implantable.

33. A method of making a medical device having a coating that inhibits the microbial colonization of a surface of the device comprising coating the surface with a composition comprising:

(a) a lectin selected to bind a biofilm compound produced by a microorganism capable of forming a biofilm on the surface of the medical device; and

(b) an antimicrobial agent selected to kill the microorganism of step (a).

34. The method of claim 33, wherein the lectin coupled to the biodegradable polymer selected to degrade at a defined rate within an in vivo environment.

35. The method of claim 33, wherein the device is implantable.